

APPLICATION OF CORROSION PROTECTIVE COATING FOR EXTENDING  
THE LIFETIME OF WATER COOLED STATOR BAR CLIPS

ABSTRACT OF THE DISCLOSURE

[0039] A water-cooled stator bar clip for electrical generators and a method for applying a corrosion-resistant protective coating, preferably Sc, Ti, Cr, Zr, Nb, Mo, Hf, Ta, W, Ni, and Al, and their alloys or oxides to existing stator bar end fittings in order to significantly reduce the possibility of leaks through the brazed connections of the copper stator bar end connections. The coatings can be applied locally using various known physical vapor deposition ("PVD"), chemical vapor deposition ("CVD") or other direct coating techniques known in the art. For example, the coatings can be applied using ion plasma deposition, sputtering or wire arc techniques (all PVD processes) or by using electroplating, high velocity oxygen free ("HVOF") deposition, DC arc or electroless plating. Preferably, the coatings are applied either to new stator bar clips or to existing clips in the field using a known pencil coater technique. After being deposited, the metallic coatings form a protective oxide layers over the existing copper brazed joint after being exposed to a water environment, thereby protecting the chemical and structural integrity of the underlying copper brazed joint.